

Attorney Docket No. IMMR-036/01US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Bruce M. SCHENA et al.

Serial No.: 09/734,953

Examiner: Jeffery A. Brier

Filed: December 11, 2000

Art Unit: 2672

Confirmation No. 6372

For: **FORCE FEEDBACK INTERFACE DEVICE WITH FORCE FUNCTIONALITY
BUTTON**

U.S. Patent and Trademark Office
220 20th Street South
Customer Window, Mail Stop RCE
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.


- ☒ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☐ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☐ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☐ Check No. ___ in the amount of \$___ for the total fee is attached.
- ☐ A return receipt postcard is also enclosed.
- ☐ Please charge \$___ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

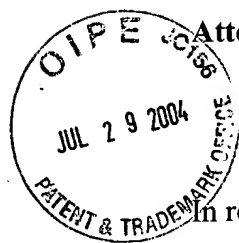
Dated: July 29, 2004

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Respectfully submitted,
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Erik B. Milch
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Attorney Docket No. IMMR-036/01US

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 08/965,720 (now U.S. Patent No. 6,166,723), 08/560,091 (now U.S. Patent No. 5,805,140), 08/756,745 (now U.S. Patent No. 5,825,308) and/or 08/881,691 (now U.S. Patent No. 6,100,874) to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☐ before the mailing date of a first office action on the merits; or
- ☒ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.


It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: July 29, 2004

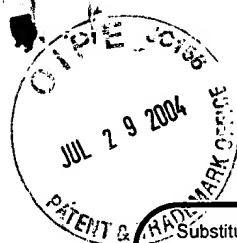
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **1** of **3****Complete if Known**

Application Number	09/734,953
Filing Date	December 11, 2000
First Named Inventor	Bruce M. Schena
Art Unit	2672
Examiner Name	Jeffery A. Brier
Attorney Docket Number	IMMR036/01US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thomer et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
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		5,283,970	2/8/1994	Aigner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
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		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
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		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

Examiner
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Sheet **2** of **3****Complete if Known**

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Examiner Name	Jeffery A. Brier
Attorney Docket Number	IMMR036/01US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

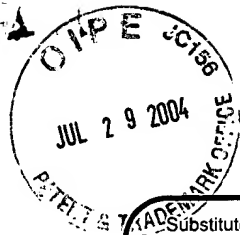
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992

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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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(1 of 2)

PTO/SB/08A (10-01)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known	
		Application Number	09/734,953
		Filing Date	December 11, 2000
		First Named Inventor	Bruce M. Schena
		Art Unit	2672
		Examiner Name	Jeffery A. Brier
Sheet 3 of 3	Attorney Docket Number	IMMR036/01US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.	
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.	

Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 7

Complete if Known

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		Number Kind Code ² (if known)			
		5,799,108	08/1998	Salcudean et al.	
		5,623,642	04/1997	Katz et al.	
		5,591,924	01/1997	Hilton	
		5,589,828	12/1996	Armstrong	
		5,576,727	11/1996	Rosenberg et al.	
		5,570,111	10/1996	Barrett et al.	
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		5,397,323	03/1995	Taylor et al.	
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		5,384,460	01/1995	Tseng	
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		5,354,162	10/1994	Burdea et al.	
		5,351,692	10/1994	Dow et al.	
		5,290,276	03/1994	Kwok	
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		5,264,768	11/1993	Gregory et al.	
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		5,259,894	11/1993	Sampson	
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		5,251,156	10/1993	Heier et al.	
		5,251,127	10/1993	Raab	
		5,243,266	09/1993	Kasagami et al.	

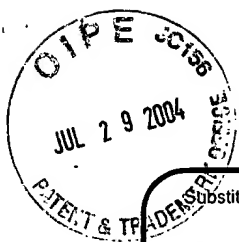
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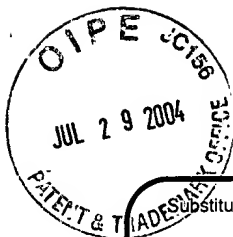
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,230,623	07/1993	Guthrie et al.	
		5,209,131	05/1993	Baxter	
		5,204,824	04/1993	Fujimaki	
		5,189,806	03/1993	McMurtry et al.	
		5,187,874	02/1993	Takahashi et al.	
		5,184,319	02/1993	Kramer	
		5,184,306	02/1993	Erdman et al.	
		5,182,557	01/1993	Lang	
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		5,178,012	01/1993	Culp	
		5,148,377	09/1992	McDonald	
		5,143,505	09/1992	Burdea et al.	
		5,142,506	08/1992	Edwards	
		5,139,261	08/1992	Openiano	
		5,132,672	07/1992	Clark	
		5,131,844	07/1992	Marinaccio et al.	
		5,128,671	07/1992	Thomas, Jr.	
		5,126,948	06/1992	Mitchell et al.	
		5,116,051	05/1992	Monocrief et al.	
		5,088,055	02/1992	Oyama	
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		5,072,361	12/1991	Davies et al.	
		5,050,608	09/1991	Wtanabe et al.	
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		5,007,300	04/1991	Siva	
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		4,983,786	01/1991	Stevens et al.	
		4,982,504	01/1991	Soderberg et al.	
		4,962,591	10/1990	Zeller et al.	
		4,961,267	10/1990	Herzong	
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		4,945,501	07/1990	Bell et al.	
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		4,942,545	07/1990	Sapia	
		4,907,973	03/1990	Hon	
		4,907,970	03/1990	Meenen, Jr.	

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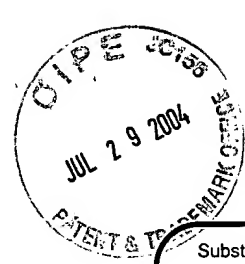
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		Number	Kind Code ² (if known)			
		4,891,889		01/1990	Tomelleri	
		4,888,877		12/1989	Enderle et al.	
		4,849,692		07/1989	Blood	
		4,819,195		04/1989	Bell et al.	
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **4** of **7****Complete if Known**Application Number **09/734,953**Filing Date **December 11, 2000**First Named Inventor **Bruce M. Schena**Art Unit **2672**Examiner Name **Jeffery A. Brier**Attorney Docket Number **IMMR036/01US****U.S. PATENT DOCUMENTS**

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		3,875,488	04/1975	Crocker et al.	
		3,795,150	03/1974	Eckhardt	
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		2,906,179	09/1959	Bower	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	4-34610		05/1990		
		WIPO	WO95/02233		01/1995		
		WIPO	WO95/20787		08/1995		
		WIPO	WO95/32459		11/1995		
		WIPO	WO95/16397		05/1996		
		WIPO	WO95/22591		07/1996		
		WIPO	WO96/42078		12/1996		
		WIPO	WO97/12357		04/1997		
		WIPO	WO97/19440		05/1997		
		UK	2254911		10/1992		
		WIPO	WO9502801		01/1995		
		WIPO	WO9622591		07/1996		

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		Application Number	09/734,953
		Filing Date	December 11, 2000
		First Named Inventor	Bruce M. Schena
		Art Unit	2672
		Examiner Name	Jeffery A. Brier
Sheet 5 of 7	Attorney Docket Number	IMMR036/01US	

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Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		WINEY III, "Computer Simulated Visual and Tactile Feedback as an Aid to Manipulator and Vehicle control", Massachusetts Institute of Technology, 1981.	
		TAN, HONG Z., "Human Factors for the Design of Force-Reflecting Haptic Interfaces", Tan, Srinivasan, Eberman, & Cheng, ASME WAM '94.	
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		Filing Date	December 11, 2000
		First Named Inventor	Bruce M. Schena
		Art Unit	2672
		Examiner Name	Jeffery A. Brier
Sheet 6 of 7	Attorney Docket Number	IMMR036/01US	

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		KOTOKU, TETSUO et al., "Environment Modeling for the Interactive Display (EMID) Used in Telerobotic Systems," IEEE Nov. 3-5, 1991, pp. 99-1004.	
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		Examiner Name	Jeffery A. Brier		
Sheet	7	of	7	Attorney Docket Number	IMMR036/01US

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		"Foot-Operated Mouse," IBM Technical Disclosure Bulletin, Apr. 1986, vol. 28, No. 11.	

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